AMENDMENT

Amendments to the Claims: Please replace all prior versions and listings of claims with the following listing of claims.

LISTING OF CLAIMS:

1. (**Currently Amended**) A method for providing service level management, comprising:

providing a ~~plurality of services~~ service over a network~~, wherein the network includes~~ having a plurality of network components that support the service, wherein performance of the service depends upon performances of the plurality of ~~services~~ network components that support the service, and wherein the service has a service parameter that represents the performance of the service;

monitoring, on a computing device, a ~~selecting at least one of the~~ plurality of component parameters for ~~services provided over the network, wherein two or more of~~ the plurality of ~~the~~ network components ~~in the network~~ that support the ~~selected~~ service, ~~and~~ wherein the plurality of component parameters measure the performances of the plurality of network components ~~selected service has a service parameter~~ that support ~~measures a service level for~~ the ~~selected~~ service;

mapping, on the computing device, ~~selecting one of~~ the plurality of component parameters monitored for the plurality of network components to ~~two or more network components that support~~ the ~~selected~~ service parameter that represents the performance of the service, wherein the service ~~selected network component has a component~~ parameter mapped to the plurality of component parameters has a value that indicates whether ~~measures a performance for~~ the ~~selected network component~~ service conforms to an agreed upon service level identified in a service level agreement;

executing, on the computing device, one or more data mining algorithms to discover ~~identifying~~ a subset of ~~function that defines a relationship between~~ the plurality of component parameters that have a greatest influence on ~~parameter for the selected network component and~~ the service parameter;

identifying, on the computing device, a function that defines a relationship between ~~for~~ the ~~selected service, wherein the identified function infers a~~ value for the service parameter and the subset of ~~from a value for~~ the plurality of component parameters that have the greatest influence on the service parameter;

monitoring, on the computing device, the ~~value for~~ subset of the plurality of component parameters that have ~~parameter via at least one monitoring agent coupled to~~ the greatest influence on ~~network, wherein the monitored value for~~ the ~~component~~ service parameter ~~measures the performance for the selected network component~~; and

determining, on the computing device, whether the service conforms to the agreed upon service level ~~for~~ identified in the ~~selected~~ service level agreement from the monitored subset of ~~value for~~ the plurality of component ~~parameter~~ parameters, wherein determining whether the service conforms to the agreed upon service level ~~for the selected service~~ includes:

providing, on the computing device, values for the monitored subset of ~~value for~~ the plurality of component parameters ~~parameter~~ to the function that defines the relationship between the value for the service ~~component~~ parameter ~~for the selected network component~~ and the subset of ~~service parameter for~~ the ~~selected service~~ plurality of component parameters; ~~and~~

inferring, on the computing device, ~~infer~~ the value for the service parameter from the monitored ~~value~~ values for the subset of the plurality of component ~~parameter via the function~~ parameters, wherein the function infers the ~~inferred~~ value for the service parameter from ~~measures~~ the monitored values for the subset of the plurality of component parameters; and

determining, on the computing device, whether the inferred value for the service parameter indicates that the service conforms to the agreed upon service level identified in ~~for~~ the ~~selected~~ service level agreement.

2. **(Cancelled)**

3. (**Currently Amended**) The method of claim [[1]] 56, wherein determining whether the service conforms to the agreed upon service level further ~~comprising~~ includes:

determining, on the computing device, that the service ~~level for~~ does not conform to the ~~selected service fails to satisfy a~~ agreed upon service level ~~agreement~~ in response to the inferred value for the service parameter failing to meet ~~not meeting~~ or ~~exceeding~~ exceed a threshold value identified in the service level agreement; and

controlling, by the computing device, the subset of the plurality of ~~selected~~ network components ~~component with one or more instructions~~ in response to determining that the service does not conform ~~level for the selected service fails~~ to ~~satisfy~~ the agreed upon service level ~~agreement~~, wherein controlling the subset of the plurality of network components includes executing one or more ~~instruction~~ instructions on the subset of the plurality of network components until ~~cause~~ the value for the service parameter meets ~~to meet~~ or ~~exceed~~ exceeds the threshold value identified in the service level agreement.

4. (**Cancelled**)

5. (**Currently Amended**) The method of claim [[4]] 3, wherein the one or more instructions control the values ~~monitored value~~ for the subset of the plurality of component ~~parameter~~ parameters.

6-10. (**Cancelled**)

11. (**Currently Amended**) The method of claim [[10]] 1, wherein determining whether the service conforms to the agreed upon service level further ~~comprising~~ includes:

determining, on the computing device, that the service conforms to ~~level for the selected service satisfies~~ the agreed upon service level agreement in response to the inferred value for the service parameter meeting or exceeding ~~the~~ a threshold value identified in the service level agreement; and

determining, on the computing device, that the service ~~level for~~ does not conform to the ~~selected service fails to satisfy the~~ agreed upon service level ~~agreement~~ in response to the inferred value for the service parameter failing to meet ~~not meeting~~ or exceed ~~exceeding~~ the threshold value identified in the service level agreement.

12. (**Currently Amended**) The method of claim 11, wherein determining whether the service conforms to the agreed upon service level further ~~comprising~~ includes generating, on the computing device, a report indicating whether the service conformed to ~~level for the selected service satisfied~~ the agreed upon service level ~~agreement for~~ during a predetermined time period.

13-29. (**Cancelled**)

30. (**Currently Amended**) The method of claim 12, wherein the report includes ~~one or more of~~ the inferred value for the service parameter ~~or the service level for the selected service for~~ during the predetermined time period.

31-33. (**Cancelled**)

34. (**Currently Amended**) The method of claim 1, wherein ~~selecting~~ the one ~~of the plurality of network components includes~~ or more data mining algorithms include a decision tree algorithm that comprises:

~~identifying two or more component parameters for the two or more network components that support the selected service, wherein each of the two or more component parameters measure the respective performance for one of the two or more network components that support the selected service;~~

producing a decision tree that represents influences ~~a respective influence~~ that ~~each of~~ the plurality of ~~two or more~~ component parameters have on the ~~value for the~~ service parameter; and

analyzing the ~~respective~~ influences represented for the plurality of ~~two or more~~ component parameters in the decision tree to identify ~~one of~~ the ~~two or more~~ subset of the plurality of component parameters that have the ~~having a~~ greatest influence on ~~the value for~~ the service parameter~~, wherein the identified component parameter measures the performance for the selected network component~~.

35. (**Currently Amended**) The method of claim 34, wherein the decision tree includes ~~two or more~~ numeric percentages that represent the ~~respective~~ influences that ~~each of~~ the plurality of ~~two or more~~ component parameters have on ~~the value for~~ the service parameter.

36. (**Currently Amended**) The method of claim 34, wherein the decision tree includes ~~two or more~~ binary values that represent the ~~respective~~ influences that ~~each of~~ the plurality of ~~two or more~~ component parameters have on ~~the value for~~ the service parameter.

37. (**Currently Amended**) The method of claim 34, wherein the decision tree includes a root node that represents the service parameter, a plurality of ~~two or more~~ leaf nodes that ~~respectively~~ represent the plurality of ~~two or more~~ component parameters, and a plurality of dependencies between the root node and the plurality of leaf nodes that represent the ~~respective~~ influences that ~~each of~~ the ~~two or more~~ plurality of component parameters have on ~~the value for~~ the service parameter.

38. (**Currently Amended**) The method of claim [[1]] 56, wherein the ~~identified~~ function includes one or more arguments that define scheduled unavailability for the subset of the plurality of ~~selected~~ network components.

39. (**Currently Amended**) The method of claim 1, wherein the identified function includes a fuzzy logic algorithm that comprises:

translating ~~configured to translate~~ the monitored ~~value~~ values for the subset of the plurality of component ~~parameter~~ parameters into [[a]] fuzzy ~~concept, determine a~~ concepts;

determining numeric ~~grade~~ grades of membership that the monitored ~~value has~~ values have in the fuzzy ~~concept~~ concepts;[[,]] and

inferring ~~infer~~ the value for the service parameter from the numeric ~~grade~~ grades of membership that the monitored ~~value has~~ values have in the fuzzy ~~concept~~ concepts.

40. (**Currently Amended**) A system for providing service level management, comprising:

a network having a plurality of network devices ~~components~~ that support a service ~~plurality of services~~ provided over the network, wherein performance of the service depends upon performances of the plurality of network devices that support the service, and wherein the service has a service parameter that represents the performance of the service;

one or more electronic devices coupled to the network, wherein the one or more electronic devices are configured to:

monitor ~~select at least one of the~~ plurality of component parameters for ~~services provided over the network, wherein two or more of~~ the plurality of ~~the~~ network devices ~~components in the network~~ that support the ~~selected~~ service, ~~and~~ wherein the plurality of component parameters measure the performances of the plurality of network devices ~~selected service has a service parameter~~ that support ~~measures a service level for~~ the ~~selected~~ service;

map ~~select one of~~ the plurality of component parameters monitored for the plurality of ~~two or more~~ network devices to ~~components that support~~ the ~~selected~~ service parameter that represents the performance of the service, wherein the service ~~selected network component has a component~~ parameter mapped to the plurality of component parameters has a value that indicates whether ~~measures a performance for~~ the ~~selected network component~~ service conforms to an agreed upon service level identified in a service level agreement; ~~and~~

execute one or more data mining algorithms to discover ~~identify~~ a subset of ~~function that defines a relationship between~~ the plurality of component parameters that have a greatest influence on ~~parameter for the selected network component and~~ the service parameter; and

identify a function that defines a relationship between ~~for~~ the ~~selected service, wherein the identified function infers a~~ value for the service parameter and the subset of ~~from a value for~~ the plurality of component parameters that have the greatest influence on the service parameter;

at least one monitoring agent coupled to the network, wherein the at least one monitoring agent is configured to monitor the ~~value for~~ subset of the plurality of component parameters that have the greatest influence on ~~parameter, and wherein the monitored value for~~ the ~~component~~ service parameter ~~measures the performance for the selected network component~~; and

a service analysis system coupled to the network, wherein the service analysis system [[is]] includes one or more processors that determine whether the service conforms to the agreed upon service level identified in the service level agreement from the monitored subset of the plurality of component parameters, wherein to determine whether the service conforms to the agreed upon service level, the one or more processors are configured to:

provide values for the monitored subset of ~~value for~~ the plurality of component parameters ~~parameter~~ to the function that defines the relationship between the value for the service ~~component~~ parameter ~~for the selected network component~~ and the subset of ~~service parameter for~~ the ~~selected service~~ plurality of component parameters; ~~and~~

~~value~~ values for the subset of the plurality of component ~~parameter via the function~~ parameters, wherein the function infers the ~~inferred~~ value for the service parameter from ~~measures~~ the monitored values for the subset of the plurality of component parameters; and

determine whether the inferred value for the service parameter indicates that the service conforms to the agreed upon service level identified in ~~for~~ the ~~selected~~ service level agreement.

41. (**Currently Amended**) The system of claim [[40]] 58, wherein to determine whether the service conforms to the agreed upon service level, the one or more processors are ~~analysis system is~~ further configured to:

determine that the service ~~level for~~ does not conform to the ~~selected service fails to satisfy a~~ agreed upon service level ~~agreement~~ in response to the inferred value for the service parameter failing to meet ~~not meeting~~ or ~~exceeding~~ exceed a threshold value identified in the service level agreement[[,]]; and

~~wherein the at least one monitoring agent is further configured to~~ control the subset of the plurality of ~~selected~~ network devices ~~component with one or more instructions~~ in response to determining that the service does not conform ~~level for the selected service fails~~ to ~~satisfy~~ the agreed upon service level ~~agreement~~, wherein controlling the subset of the plurality of network devices includes executing one or more instructions on the subset of the plurality of network devices until ~~cause~~ the value for the service parameter meets ~~to meet~~ or ~~exceed~~ exceeds the threshold value identified in the service level agreement.

42. (**Cancelled**)

43. (**Currently Amended**) The system of claim [[42]] 41, wherein the one or more instructions control the values ~~monitored value~~ for the subset of the plurality of component ~~parameter~~ parameters.

44-45. (**Cancelled**)

46. (**Currently Amended**) The system of claim [[45]] 40, wherein to determine whether the service conforms to the agreed upon service level, the one or more processors are ~~analysis system is~~ further configured to:

determine that the service conforms to ~~level for the selected service satisfies~~ the agreed upon service level agreement in response to the inferred value for the service parameter meeting or exceeding ~~the~~ a threshold value identified in the service level agreement; and

determine that the service ~~level for~~ does not conform to the ~~selected service fails to satisfy the~~ agreed upon service level ~~agreement~~ in response to the inferred value for the service parameter failing to meet ~~not meeting~~ or exceed ~~exceeding~~ the threshold value identified in the service level agreement.

47. (**Currently Amended**) The system of claim 46, wherein to determine whether the service conforms to the agreed upon service level, the one or more processors are ~~analysis system is~~ further configured to generate a report indicating whether the service conformed to ~~level for the selected service satisfied~~ the agreed upon service level ~~agreement for~~ during a predetermined time period.

48. (**Currently Amended**) The system of claim 47, wherein the report includes ~~one or more of~~ the inferred value for the service parameter ~~or the service level for the selected service for~~ during the predetermined time period.

49. (**Currently Amended**) The system of claim 40, wherein the ~~service analysis system is further configured to~~ one or more data mining algorithms include a decision tree algorithm that comprises:

~~identify two or more component parameters for the two or more network components that support the selected service, wherein each of the two or more component parameters measure the respective performance for one of the two or more network components that support the selected service;~~

producing ~~produce~~ a decision tree that represents influences ~~a respective influence~~ that ~~each of~~ the plurality of ~~two or more~~ component parameters have on the ~~value for the~~ service parameter; and

analyzing ~~analyze~~ the ~~respective~~ influences represented for the plurality of ~~two or more~~ component parameters in the decision tree to identify ~~one of~~ the ~~two or more~~ subset of the plurality of component parameters that have the ~~having a~~ greatest influence on ~~the value for~~ the service parameter~~, wherein the identified component parameter measures the performance for the selected network component~~.

50. (**Currently Amended**) The system of claim 49, wherein the decision tree includes ~~two or more~~ numeric percentages that represent the ~~respective~~ influences that ~~each of~~ the plurality of ~~two or more~~ component parameters have on ~~the value for~~ the service parameter.

51. (**Currently Amended**) The system of claim 49, wherein the decision tree includes ~~two or more~~ binary values that represent the ~~respective~~ influences that ~~each of~~ the plurality of ~~two or more~~ component parameters have on ~~the value for~~ the service parameter.

52. (**Currently Amended**) The system of claim 49, wherein the decision tree includes a root node that represents the service parameter, a plurality of ~~two or more~~ leaf nodes that ~~respectively~~ represent the plurality of ~~two or more~~ component parameters, and a plurality of dependencies between the root node and the plurality of leaf nodes that represent the ~~respective~~ influences that ~~each of~~ the ~~two or more~~ plurality of component parameters have on ~~the value for~~ the service parameter.

53. (**Currently Amended**) The system of claim [[40]] 58, wherein the ~~identified~~ function includes one or more arguments that define scheduled unavailability for the subset of the plurality of ~~selected~~ network devices.

54. (**Currently Amended**) The system of claim 40, wherein the identified function includes a fuzzy logic algorithm ~~configured to translate~~ that comprises:

translating the monitored ~~value~~ values for the subset of the plurality of component ~~parameter~~ parameters into [[a]] fuzzy ~~concept, determine a~~ concepts;

determining numeric ~~grade~~ grades of membership that the monitored ~~value has~~ values have in the fuzzy ~~concept~~ concepts;[[,]] and

inferring ~~infer~~ the value for the service parameter from the numeric ~~grade~~ grades of membership that the monitored ~~value has~~ values have in the fuzzy ~~concept~~ concepts.

55. (**New**) The method of claim 1, wherein the subset of the plurality of component parameters that have the greatest influence on the service parameter are representative of the plurality of component parameters that measure the performances of the plurality of network components that support the service.

56. (**New**) The method of claim 55, wherein the subset of the plurality of component parameters measure the performances of a subset of the plurality of network components that support the service, whereby the performance of the service depends upon performances of the subset of the plurality of network components.

57. (**New**) The system of claim 40, wherein the subset of the plurality of component parameters that have the greatest influence on the service parameter are representative of the plurality of component parameters that measure the performances of the plurality of network devices that support the service.

58. (**New**) The system of claim 57, wherein the subset of the plurality of component parameters measure the performances of a subset of the plurality of network devices that support the service, whereby the performance of the service depends upon performances of the subset of the plurality of network devices.